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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,467	10/09/2003	Maged E. Beshai	120-319	9135

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EXAMINER	
O CONNOR, BRIAN T	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/682,467	BESHAI ET AL.
	Examiner	**Art Unit**
	Brian T. O'Connor	2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,7-10,17-19 and 22-27* is/are rejected.

7)☒ Claim(s) *5,6,11-16,20 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10/9/2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 4 is objected to because of the following informalities: the claim ends with a semi-colon (;) and all claims are required to end with a period (.). Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Livermore et al. ("Architecture and Control of an Adaptive High-Capacity Flat Network", IEEE Communications Magazine, May 1998; hereafter Livermore) in view of Xiong et al. (US 6,671,256; hereafter Xiong).

With respect to claim 1, Livermore discloses a network with a group of optical core nodes in a central domain (Figure 13) and every node has a group of input ports and output ports to connect with other core nodes (Figure 15). The network includes edge nodes in side domains (Figure 13) arranged in a subtending manner (second full paragraph, right column, pg 111). An output port on a core node is shown connecting to an input port of another core node (Figure 14).

Livermore fails to disclose an output port possessing a bimodal burst-formation device operable to compute burst-descriptors and flow-rate-allocation requirements for data bursts.

Xiong discloses an edge node with a signal processor device (315 of Figure 3) that monitors burst flows and adjusts parts of the data channel in response to evolving conditions (column 4, lines 48-61). The signal processor device is bi-modal because it can reserve a single data channel or multiple data channels (Abstract). The signal processor also operates with a routing processor (305 of figure 3) the routing processor is capable of routing burst switching protocols and must be able to computer burst-descriptors.

Xiong realizes the benefit of greater channel bandwidth efficiency by using a dedicated signal processor in an edge node of a optical burst-switching network (column 2, lines 13-25). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the signal processor as described by Xiong with the network of Livermore.

With respect to claim 2, Livermore fails to disclose output ports transmitting burst descriptors and flow-rate-allocation requirements to an external node.

Xiong discloses that the edge node also contains a scheduler (330 of Figure 3) for scheduling bursts transmissions (column 5, lines 1-7) and bit-rate settings for channel groups (column 6, lines 34-65; column 7, lines 5-18; viewed as equivalent to flow-rate-allocation requirements because the edge node monitors current bit rates and adjusts channels bit-rates accordingly) to other nodes in a network (100, C1, C2, C3 of Figure 2).

Xiong realizes the benefit of greater channel bandwidth efficiency by using a dedicated signal processor in an edge node of a optical burst-switching network (column 2, lines 13-25). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the signal processor as described by Xiong with the network of Livermore.

With respect to claim 3, Livermore fails to disclose inbound ports on an external node receiving burst-transfer schedules for waiting bursts and burst-transfer permits for forthcoming bursts for at least one outbound port.

Xiong discloses that the edge nodes will send data channel reservation requests (column 2, lines 13-25; viewed as equivalent to burst-transfer schedules) to other edge nodes and receive data channel reservation acknowledgements (column 2, lines 13-25; viewed as equivalent to burst-transfer permits) from other edge nodes in the network.

Xiong realizes the benefit of greater channel bandwidth efficiency by using a dedicated signal processor in an edge node of a optical burst-switching network (column 2, lines 13-25). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the signal processor as described by Xiong with the network of Livermore.

With respect to claim 4, Livermore fails to disclose an edge node with an edge controller in communication with input port and output ports, input control port for sending control signals to ingress port and inbound ports to edge controller, and output control port for sending control signals from egress port and outbound ports to edge controller.

Xiong discloses that the edge node contains a scheduler (330 of Figure 3; viewed as equivalent to an edge controller) with an input control port and an output control port (two-way arrow between 330 of Figure 3 and 315 of Figure 3) to send control signals to outbound ports and inbound ports (355 of Figure 3).

Xiong realizes the benefit of greater channel bandwidth efficiency by using a dedicated signal processor in an edge node of a optical burst-switching network (column 2, lines 13-25). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the signal processor as described by Xiong with the network of Livermore.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Livermore in view of Xiong and further in view of Kim (US 6,044,091).

With respect to claim 7, Livermore fails to disclose a timing circuit operable to time-lock to an external timing circuit.

Kim discloses a controller (210, 100 of Figure 3) for measuring the transmission delay between a single bode (E of Figure 2) and a group of source node (D, C, A of Figure 2) then synchronizing counters (220, 120 of Figure 3) to coordinate transmission among the nodes (step b, step c, step d of claim 1).

Kim realizes the benefit of improved guaranteed levels of service by time synchronizing nodes along a signal path (column 3, lines 5-12). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the technique of Kim with the network of Livermore.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Livermore in view of Xiong and further in view of Liu (US 6,963,564).

The Examiner places notice that the limitation "means for interleaving variable-size ..." recited in claim 8 is being treated under 35 USC 112, sixth paragraph.

With respect to claim 8, Livermore fails to disclose burst-formation devices which possess means for interleaving variable-size data bursts and regular time slots in a time frame.

Liu discloses an optical burst switching control device (40 of Figure 6; 20 of Figure 7) that has an egress scheduler (52 of Figure7; viewed as equivalent to the recited means) that forms interleaved variable-sized data burst and regular time slots (30, 29, 28, 32 of

Figure 3; column 4, lines 3-15; where the BHP contains a length parameter for data burst thus supporting variable-sized data bursts).

Liu realizes the benefit of increased efficient by using data-burst switching devices in an optical network (column 2, lines 46-47). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the burst-forming device of Liu with the network of Livermore.

6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong in view of Qiao (US 6,956,868).

With respect to claim 9, Xiong discloses a multitude of core nodes (C1, C2, C3, C5 of Figure 2) that connect source and sink edge nodes (E1, E2, E3 of Figure 2). Each core node contains input ports and output ports (555 of Figure 5) to transmit and receive optical signals (700 of Figure 7). Each core node receives requests from edge nodes that monitors burst flows and adjusts parts of the data channel in response to evolving conditions (column 4, lines 48-61; viewed as equivalent to requesting a certain capacity allocation). The edge nodes will request reservation for a single data channel or multiple data channels (Abstract). Xiong also discloses a burst scheduler (535 of Figure 5) as part of the core node.

Xiong fails to explicitly disclose a core controller and a burst-descriptor generator in the core node.

Qiao, in an invention of optical bust switching, discloses a core node with a core controller (LOBS Control of Figure 1) and a burst-descriptor generator ((2) of Figure 1) (column 3, lines 28-30; column 3, lines 54-67).

Qiao teaches the advantage of more flexible path routing by using a core controller with core nodes (column 3, lines 4-10). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the core controller and burst-descriptor generator of Qiao with the core node of Xiong.

With respect to claim 10, Xiong further discloses that the core node will use a scheduler (535 of Figure 5) and a channel information base (550 of Figure 5) to process incoming burst requests. The incoming request may be for single or multiple data channels (Abstract) and the scheduler builds a table to place multiple channel requests into single wavelength channels (column 6, lines 34-65). Flow rate allocation is also sent to the core node by edge nodes using burst flow monitoring device (325 of Figure 3).

7. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xiong in view of Qiao.

With respect to claim 17, Xiong discloses a multitude of core nodes (C1, C2, C3, C5 of Figure 2) that connect source and sink edge nodes (E1, E2, E3 of Figure 2) and links (205, 120 of Figure 2) connect the core node and edge nodes. Each core node receives requests from edge nodes that monitors burst flows and adjusts parts of the data channel in response to evolving conditions (column 4, lines 48-61; viewed as equivalent to requesting a certain capacity allocation). The edge nodes will request reservation for a single data channel or multiple data channels (Abstract). Xiong also discloses a burst scheduler (535 of Figure 5) as part of the core node.

Xiong fails to explicitly disclose a core controller in the core nodes and an edge controller in the edge nodes.

Qiao, in an invention of optical bust switching, discloses a core node with a core controller (LOBS Control of Figure 1) ((2) of Figure 1) (column 3, lines 28-30; column 3, lines 54-67) and an edge node with an edge controller (LOBS Control of Figure 1) ((2) of Figure 1). Figure 1 displays a core node and an edge node.

Qiao teaches the advantage of more flexible path routing by using a core controller with core nodes (column 3, lines 4-10). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the core controller and burst-descriptor generator of Qiao with the core node of Xiong.

With respect to claim 18, Xiong further discloses an edge node (E2-115 of Figure 2) connecting two networks (NET 2, NET 3 of Figure 3) to a core node (C4 of Figure 2).

With respect to claim 19, Xiong further discloses a DCP management module (520 of Figure 5) to regulate all acknowledges burst-transfer requests (column 6, lines 16-32).

8. Claims 22-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gersht et al. (US 6,405,257) in view of Qiao.

The Examiner places notice that the limitations "means for determining flow-rate ...", "means for determining capacity ...", and "means for communicating ..." recited in claim 22 are being treated under 35 USC 112, sixth paragraph.

With respect to claim 22, Gersht discloses a parent network (Figure 1) comprised of a core network (160 of Figure 1) with a number of core nodes (100a, 100b, 100c of Figure 1) and a group of embedded network (130a, 130b, 130c of Figure 1) each having a edge nodes (140-1, 150-1, 145-1 of Figure 1). Gerscht also teaches a network controller (120 of Figure 2; viewed as equivalent to an exclusive configuration controller) with a burst-level controller (200 of Figure 2; viewed as equivalent to a means for determining flow-rate requirements), a network management database (210 of Figure 2; viewed as equivalent to a means for determining capacity requirements between edge nodes and core nodes) employed to determine parameters between a source node and a destination node (column 3, lines 7-13), and a interface for burst traffic (110ac, 110ab of Figure 2; viewed as equivalent to means for communicating the capacity requirements).

Gersht fails to disclose determining path requirements between source node and destination node.

Qiao, in an invention of optical burst networking, discloses a controller for core node and edge node that will find a path using a CBR/ER algorithm for bursts between nodes (column 5, lines 22-34).

Qiao teaches the advantage of more flexible path routing by using a core controller with core nodes (column 3, lines 4-10). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the core controller and burst-descriptor generator of Qiao with the network controller of Gersht.

With respect to claim 23, the Examiner places notice that the limitation "mean for automated network-sizing ..." is being treated under 35 UC 112, sixth paragraph.

Gersht further discloses that network sizing is performed with the algorithm (400, 410, 420, 430, 400, 460 of Figure 4) in order for network changes to be included in the burst-level calculation.

With respect to claim 24, Gersht fails to disclose a core controller in any core node (the source node are viewed as core node).

Qiao, in an invention of optical bust switching, discloses a core node with a core controller (LOBS Control of Figure 1) ((2) of Figure 1) (column 3, lines 28-30; column 3, lines 54-67) and an edge node with an edge controller (LOBS Control of Figure 1) ((2) of Figure 1). Figure 1 displays a core node and an edge node.

Qiao teaches the advantage of more flexible path routing by using a core controller with core nodes (column 3, lines 4-10). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the core controller and burst-descriptor generator of Qiao with the node of Gersht.

With respect to claim 25, Gersht fails to disclose an exclusive configuration controller in any edge node (the source node are viewed as edge node).

Qiao, in an invention of optical bust switching, discloses a core node with a core controller (LOBS Control of Figure 1) ((2) of Figure 1) (column 3, lines 28-30; column 3, lines 54-67) and an edge node with an edge controller (LOBS Control of Figure 1) ((2) of Figure 1). Figure 1 displays a core node and an edge node.

Qiao teaches the advantage of more flexible path routing by using a core controller with core nodes (column 3, lines 4-10). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the core controller and burst-descriptor generator of Qiao with the node of Gersht.

With respect to claim 26, Gersht fails to disclose an exclusive configuration controller in any core node (the source node are viewed as core node).

Qiao, in an invention of optical bust switching, discloses a core node with a core controller (LOBS Control of Figure 1) ((2) of Figure 1) (column 3, lines 28-30; column 3, lines 54-67) and an edge node with an edge controller (LOBS Control of Figure 1) ((2) of Figure 1). Figure 1 displays a core node and an edge node.

Qiao teaches the advantage of more flexible path routing by using a core controller with core nodes (column 3, lines 4-10). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the core controller and burst-descriptor generator of Qiao with the node of Gersht.

With respect to claim 27, Gersht fails to disclose determining path requirements between source node and destination node.

Qiao, in an invention of optical burst networking, discloses a controller for core node and edge node that will find a path using a CBR/ER algorithm for bursts between nodes (column 5, lines 22-34).

Qiao teaches the advantage of more flexible path routing by using a core controller with core nodes (column 3, lines 4-10). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the core controller and burst-descriptor generator of Qiao with the network controller of Gersht.

Allowable Subject Matter

9. Claims 5, 6, 11-16, 20, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. O'Connor whose telephone number is 571-270-1081. The examiner can normally be reached on 9:00AM-6:30PM, M-F, 1st Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BTO

Brian T. O'Connor
November 5, 2007
Patent Examiner

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